

STATE ADVISORY COUNCIL ON SCIENCE AND TECHNOLOGY M I N U T E S

**Tuesday, September 5, 2000
3:00 - 5:00 p.m.
State Capitol, Room 223
Salt Lake City**

MEMBERS & ASSOCIATE MEMBERS PRESENT:

SAUER, Dennis Alliant Techsystems, Inc.
JOHNSON, Susan Futura Industries
HOOPER, Gary Brigham Young University
PUGMIRE, Ron University of Utah
BREHM, Michael Brehm Environmental LLC
LUND, Gary Thiokol Corporation

MEMBERS ABSENT OR EXCUSED:

KOEHN, Richard University of Utah
CONRAD, Diane Salt Lake Olympic Com.
DOENGES, Peter Evans and Sutherland, Corp
TAKACH, Troy Parvus Corporation

OTHERS PRESENT:

HANSEN, Conly Utah State University
MORRIS, Nal Parowan Gap
MAULDWIN, Brian Circle Four Farms
BAUER, Dan GOPB
WINTERS, Suzanne State Science Advisor
WALTERS, Clara GOPB

I. Call to Order/Introductions/Approval of Minutes

Susan Johnson called the meeting to order at 3:00 p.m. She welcomed Dr. Suzanne Winters back as the State Science Advisor and thanked Danny Bauer for the exceptional job he did in her absence. A motion was made to accept the minutes of the June 6, 2000 meeting as written. Voting was unanimous and the minutes were approved.

II. Discussion of Vacancies in Science Council - Suzanne Winters

It was noted there are currently 4 vacancies on the Council. This is due to Peter Gerity leaving Utah State University and Richard Koehn's retirement from the University of Utah. The positions are positional and will be filled when the new Vice Presidents of Research are announced. For now, Dr. Ron Pugmire will represent the University of Utah and Dr. Brent Miller will attend for Utah State University.

Virginia Ord's term expired and names were submitted to the Governor for her replacement. The new member will be announced at the next Council meeting. The Council will also send names to the Governor for the last

vacant seat which should be filled by the next meeting.

Action Item: Submit names to the Governor for the remaining vacant position on the State Advisory Council.

Responsible Party: Suzanne

III. Update: Research on the Parowan Gap - Nal Morris

An Executive Summary for Volume I was written that covered the following areas:

- I. Project History
- II. Project Plan
- III. Project Status
- IV. Issues
- V. Alternative Resolutions

Independent research at Parowan Gap, Iron Co., Utah started in July 1990 and culminated in December 1993 with the discovery of a Native American observational calendar system. In February 1994, Parowan City and Iron County made joint application for ISTEA matching funds through Utah Department of Transportation (UDOT) as provided by the Federal Highways Administration (FHWA). This was approved and an archaeological consultant was hired to do research prior to physical improvements to the site.

A contract was signed in July 1996 for Phase I, the research phase of the project. Funds were stopped in April 1997 and began again in September 1997 until they were again stopped in December 1997. The archaeoastronomy report Vol. I was completed by Mr. Morris in July of 1998 with copies given to Parowan City and the Archaeological Consultant. The rest of the deliverables of the contract have not yet been received by the County. Phase II (improvements and site stabilization) of the contract awaits completion of Phase I.

The UDOT Richfield office has terminated the contract and requested an as-is delivery of all project materials. A FHWA investigator is handling this and the renewal of the State archaeological permit held by Garth Norman has been denied.

Due to problems incurred during Phase I, Phase II progress will require inter-agency cooperation. Mr. Norris requested the State Advisory Council's assistance by interceding with UDOT to resolve the issue with the archeologist and resume work on the project.

Action Item: Mike Brehm to contact UDOT to help resolve the impasse on the archaeological deliverables with the scientists, accountants and contractors to allow the Parowan Gap Research Project to proceed.

IV. Presentation: Circle Four Farms - Brian Mauldwin

Circle Four Farms, owned by Smithfield Foods, is involved in hog production, sending most to packing plants in California. They employ 400 people in the county with an annual payroll of \$9.2 million. Circle Four pays \$500,000 annual property tax and has grain contracts with more than 70 local farmers.

In 1992, the Milford Economic Development Council invited Circle Four to locate in Milford. Circle Four located here because of the availability of private land, water, transportation, isolation and proximity to California. In 1993 they began working with regulators from the State of Utah and in 1995 the first pigs were born.

Circle Four has an up-to-date waste water handling system. The animals are in buildings or barns with a

concrete floor with slats with a 16 inch pit underneath the floor. The pig waste goes through the floor into the pit and is flushed through sewer lines to the primary lagoons. The lagoons are lined with 40 mil high density polyethylene with 8 inches of compacted soil underneath. The waste breaks down through anaerobic digestion and becomes a sludge. The lagoons are designed to have a 20 year fill capacity, meaning that after 20 years the primary lagoon will be one third full. The water from the primary lagoon is recycled back into the building underneath the animals and used to flush the waste out again. The entire operation uses a similar amount of water as a 300 acre alfalfa farm. There is a secondary basin called the containment basin which is used during the cold winter months to help contain the liquid until summer when higher rates of evaporation take place.

Circle Four Farms has an alternate manure handling system in use. It's called the BION System which is currently used at 17 dairies and pig farms across the United States. The system renders pig waste into profit by producing a marketable soil enhancement instead of creating a waste sludge. Circle Four Farms has the largest BION system in use in the world. This system is designed to reduce odor.

Currently there are two production areas at Circle Four; the Skyline Pyramid and Blue Mountain Pyramid. Skyline is complete with 32,000 sows. Blue Mountain is growing with 15,000 sows currently and a potential for 32,000. This will require 240 new employees over the next three to five years. Based upon the number of sows, they are the 17th largest swine producer in the U.S.

There are three different types of farms at Circle Four. The farrowing house is where the breeding by artificial insemination takes place and the sows are kept until they give birth. At 2 weeks the piglets are transferred to the Nurseries, being held here for about 7 weeks. The pigs are transferred again to the Finisher Farms where they stay for 18-20 weeks after which they are trucked to California.

Health standards are stringent at Circle Four. Everyone must shower and wear clean overalls prior to entering any of the three farms and must wait 96 hours between going from one farm to another.

Due to public perception, increasing EPA involvement in agriculture and intra-state agency coordination, Circle Four Farms has a challenging future ahead of them. Circle Four believes the type of operation they have in place can provide a higher quality, lower cost product, not only to the consumer, but to their Milford neighbors.

Comments:

Conly Hansen, Department of Agriculture, Utah State University commented on work being done at Utah State University on waste management of large farms throughout the United States. He said waste lagoons are becoming a problem for states due to more stringent regulations. In the long term, leakage from the lagoons is the prime concern, however ammonia and nitrogen build-up in the lagoons are also of concern. Utah State University is working on an anaerobic process that will help solve some of the problems with nutrient build-up in the lagoons and this process will likely be commercialized in the near future.

Action Item: Circle Four Farms will send the Council the final report on the water quality/health issues being researched in Milford.

V. Update on Tooele Chemical Agent Incinerator Agent Release - Dan Bauer

Final reports have not been released to date, so Dan will respond to this at the December meeting.

VI. Other

Sue Johnson proposed that Gary Hooper be nominated to Vice Chair of the Council to fill the vacancy left by Peter Gerity. This proposal passed unanimously.

Suzanne presented the Executive Summary of the Commission for Advancement of Women and Minorities in Science Engineering and Technology Development. She was appointed by Governor Leavitt and participated in this Congressionally formed, eleven member Commission over the past two years. The findings are that women and minorities are not represented in the science and technical fields in parity with their populations. In the Information Technology fields, fewer women are entering this field than in the mid '80s. With the United States in an economic boom, many high technology positions are going unfilled and companies are recruiting overseas for talent. Given the long range potential economic impacts of that issue, it is time to look at ways to increase women and minorities in technical fields. Suzanne said the full report will be released on the web soon.

The next meeting of the Council will be December 5, 2000 at 3:00 p.m.

VII. Adjourn

The meeting was adjourned at 5:00 p.m.